

## **REMARKS**

Claims 1, 10-14, 17-18 and 29-33 are pending in the application.

Claims 15-16, 19-23, 25, 27 and 28 have been withdrawn from consideration.

New independent claim 33 is added to the application.

No new matter is added to the application by new claim 33.

### **I. THE RESTRICTION REQUIREMENT**

The examiner made the restriction requirement final in the November 24, 2010 Office Action. As a result, the Applicant has withdrawn claims 15-16, 19-23, 25, 27 and 28 from consideration above.

### **II. THE ANTICIPATION REJECTION**

The examiner rejected claims 1, 29-30 and 32 for being anticipated by Collins et al. (USP 6,371,219) (hereinafter Collins). Collins relates to forming a shaped charge liner component from a metal loaded matrix material, whereas the present invention may be viewed as an improvement thereover in that it further teaches that the composition of the component may be varied so as to best "tailor" the properties of the shaped charge. In particular, independent claim 1 requires the liner to include "a first portion and a second portion, the first and second portions comprising different ratios of filler to matrix". Collins does not disclose these claim 1 features nor are these features inherent in Collins as the examiner alleges.

#### **A. The Novelty Rejection Is Based Upon A Legally Flawed Claim Interpretation**

The novelty rejection is without merit because the examiner has not given claim 1 a reasonable construction. The Federal Circuit's *en banc* decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard: The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art."

The claim 1 requirement for different ratios of filler to matrix in the first and second portions has the clear technical purpose of deliberately providing different technical properties in the two portions. The present specification teaches how these differences allow the

characteristics of the liner to be “tuned” (c.f. page 3, lines 17 to 20 and page 5, lines 16 to 19) for example, to achieve a desired perforation. One method of achieving different loadings (of non-explosive filler in a polymer matrix) at different regions of the same component, is described on page 12, line 20 to 25, of the PCT specification. The method describes using multiple injection ports, so as to deliver different concentrations of non-explosive filler (in a polymer matrix) to different parts of the same component. In contrast, Collins calls for a metal “dispersed” in a polymer matrix. (Collins at col. 2, lines 58-61). The skilled reader would immediately understand that Collins only teaches a uniform component with uniform properties across its cross-section and hence is not covered by the claim 1 feature.

Here, the Examiner is taking an extreme view that if you examine Collins at a microscale - at a sufficiently high magnification - you will inevitably find different portions of a tiny size with different filler ratios. However, that construction of claim 1 is unreasonable based upon considering the specification as a whole which clearly and unequivocally discusses the differing ratio portions as macroscale features. Hence, the examiner’s broadening of the claim 1 “portions” to cover alleged microscale imperfections in homogeneity is inconsistent with how one of skill in the art would understand the terms after reading the specification as a whole even after giving the terms a broad “reasonable” interpretation.

One important reason why the examiner’s claim interpretation is illogical is because it would ignore important teachings of Applicant’s specification. In particular, the present specification teaches that the non-explosive filler can be distributed either homogeneously or non-uniformly in the matrix. One skilled in the art would understand the Applicants meant for there to be a difference between the homogeneous and non-uniform distribution. However, the examiner has taken the position that a homogeneous distribution is inherently non-uniform and, in effect, that they are one and the same. i.e., there is no such thing as a homogenous distribution. This incongruous result flies in the face of what those of skill in the art would understand, what the Applicants have described and claimed and it further highlights the illogical position that the examiner has taken in interpreting the claims. For these reasons, the examiner’s anticipation rejection must be withdrawn.

## **B. A Liner Having Different Filler Matrix Ratios Is Not Inherent In Collins**

The examiner alleges that the first and second portions of independent claim 1 are found inherently in Collins. The examiner's anticipation rejection is further without merit because the inherency allegation is both factually and legally flawed. The present application claims and teaches in the specification to vary the distribution of the filler material or materials over the extent of the liner (page 9 line 26) or the case (page 11 line 20). Indeed, Applicant's invention is best summarised on page 9, line 25 to line 33 of the PCT specification, where it describes that "Such a variation in the loading permits the "speed of sound" within the liner 21 to be varied and thus allow the liner collapse mechanism to be tuned to suit a particular application.". See also page 11 lines 19 to 22 and page 12 lines 17 to 25 where, in particular, it teaches that "it is possible to tune both the penetration characteristics and the frangibility characteristics independently" within a component that is formed during a single operation. Hence Applicant achieves improved control over the physical characteristics of the component as compared with Collins, and hence, improved technical performance.

In order for a prior art reference to have an inherent feature or step, a structure or step in the prior art must necessarily function in accordance with the anticipated claim feature. *In re King*, 231 USPQ 136, 138 (Fed. Cir. 1986). The examiner's inherency rejection is technically flawed because it cannot be demonstrate that every method that exists for manufacturing the matrix recited in Collins will inherently result in the claimed invention. First off, Collins does not provide any teaching whatsoever that the composition of any filler component may be varied across its dimensions. Indeed, all that Collins discloses is a metal (e.g. in the form of a powder) that is dispersed in a polymer matrix. (Collins at col. 2, lines 58-61). Collins further includes absolutely no teaching about how the "dispersion" is accomplished. Thus, any method known to one skilled in the art for producing such a matrix could be used. It would not take the skilled person long to identify a matrix preparation procedure that could create a homogeneous matrix on a macroscale. For example, a matrix might be prepared from a homogeneous metal containing polymer material or the matrix might be formed from a aqueous mixture of a polymer and metal solution that is allowed to dry. In other words, it is the Applicant's position that it is impossible for the examiner to show that all possible methods for producing metal distributed in a polymer matrix would inherently result in the Applicant's invention.

The deviation from logic that results in the examiner's inherency rejection belies another flaw in the examiner's inherency position – that is that one skilled in the art would understand that the Collins matrix is a homogeneous matrix. In order to provide a factually supported inherency position, the examiner must demonstrate that the inherent feature would be recognized by persons of skill in the art. See MPEP §2112 (IV). As has been demonstrated above, one skilled in the art would not understand Collins to disclose (inherently or expressly) the same first and second portions that are described in the specification and that are claimed in claim 1. For each of these reasons, the examiner's inherency position fails and the novelty rejection of claims 1, 29-30 and 32 must be withdrawn.

### **III. THE OBVIOUSNESS REJECTIONS**

The examiner rejected claims 10-13, 17-18 and 31 for being obvious over Collins.

Claims 10-13, 17-18 and 31 are patentable at least by virtue of their dependence upon independent claim 1 which is patentable for at least the reasons recited in Section II above.

### **IV. NEW CLAIM 33**

New independent claim 33 is added to the application above. New claim 33 is similar to independent claim 1 except that it requires “that the different loadings of filler to matrix provide the liner with tuned characteristics”. This additional feature is not found in Collins because the reference does not expressly or inherently disclose combination of filler portions that would result in tuned characteristics.

### **V. CLAIM REJOINDER REQUEST**

Should claim 1 be found to be patentable, then Applicant requests rejoinder of claims 15-16, 19-23 and 25-28.

## **CONCLUSION**

All pending application claims are believed to be ready for patenting for at least the reasons recited above. Favorable reconsideration and allowance of all pending application claims is, therefore, courteously solicited.

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